The Impact of the Urban Advantage Initiative on Middle School Science Teaching and Learning

By

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The aim of this study was to identify the impact that participation in the Urban Advantage Initiative, a professional development program designed for middle school science teachers in New York City, had on science teaching and learning. Urban Advantage is a long-term situated learning model in which teachers engaged in over 100 hours of professional development over five years, with an option to continue in select activities in subsequent years. The professional development occurred at eight science institutions in the city, including: 1) American Museum of Natural History, 2) Bronx Zoo, 3) New York Botanical Garden, 4) Brooklyn Botanic Garden, 5) New York Aquarium, 6) Queens Botanical Garden, 7) New York Hall of Science, and 8) Staten Island Zoo. Teachers received funding for field trips, vouchers for student visits with their families, and classroom resources. Their administrators attended networking events to promote collaboration and a whole-school focus. The study population consisted of nine teachers and three administrators with varying levels of experience. They were interviewed to discuss personal and professional experiences related to their participation in Urban Advantage. The study triangulated student artifacts and interview transcripts to make recommendations for future middle school science professional development programs as a way to improve student science learning, particularly for students who attend traditionally underserved schools.

The data analysis of this qualitative observational study revealed five major themes with respect to the impact of the Urban Advantage program on teachers: 1) motivation, 2) pedagogical value, 3) complements to external demands, 4) student impacts, and 5) programmatic constraints. These themes were examined and integrated to create an emergent explanatory framework for future professional development design. This framework includes three major components: 1) facilitation of improved student engagement, 2) higher teacher motivation, and 3) mechanisms for transformed school science culture. As a result of this whole-school focused program that included specific roles for teachers, administrators, parent coordinators, students and families, Urban Advantage improved individual science teaching practices, and in some cases, facilitated transformed school science cultures. Programmatic innovations may be included in the future design of professional development programs for middle school science teachers.

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Place: Stony Brook Manhattan Creative Arts, 535 8th Avenue, New York, NY 10018